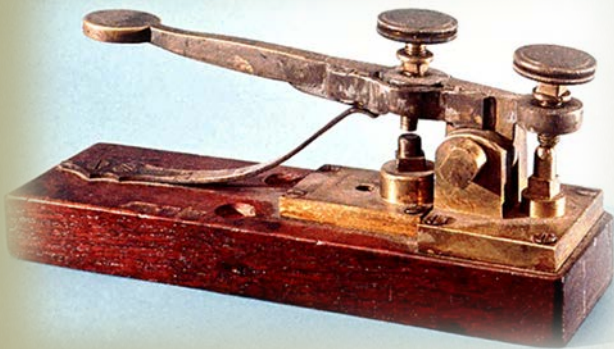


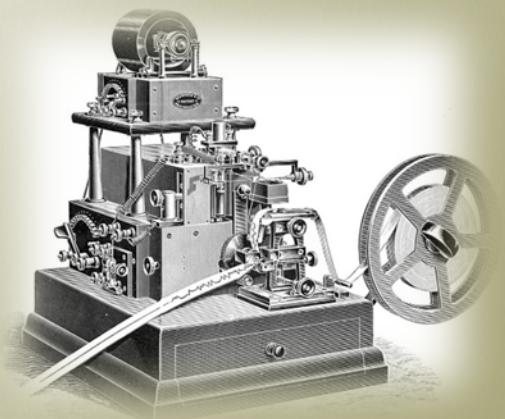
The Telegraph in Australia

Today, exponential amount of data and information are being delivered and shared throughout the world. It is called as the “Information age”. However, not many people would consider we have been hugely benefited a very basic communication technology, the telegraph, which can be thought as the pioneer of today’s telecommunication systems, phones and the internet. And the telegraph absolutely impacted the modern society and brought remarkable advantages for both economic and social extents. Hence, I’d like to talk about the telegraph technology briefly and most importantly, we’ll find out how Australians did bring this technology into the vast continent.



The First Telegraph Key

Telegraph is defined that “A communications system that transmits and receives simple unmodulated electric impulses, especially one in which the transmission and reception stations are directly connected by wires” (Telegraph n.d.).



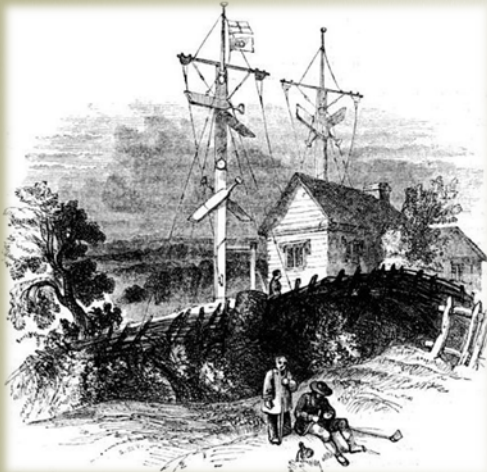
Morse Code Transmission

The Telegraph is technology

Before the invention of telegraph technology, delivering information was thought as a physical transportation. Messages, for instance, were being delivered by foot, homing pigeons and the pony expresse (Carey, 2009).



The Pony Express was most efficient method for information transfer at the time

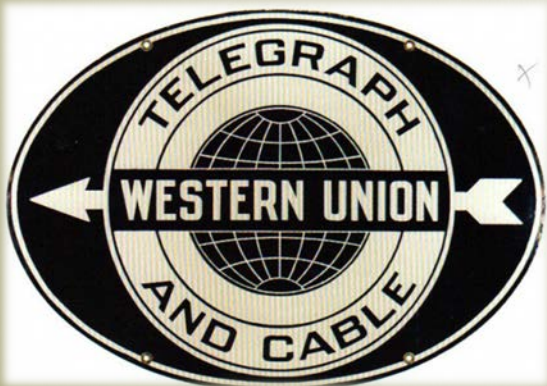


*General Telegraph Association signal station 1842
Watson's semaphore at Forest Hill, Sydenham*

The electric telegraph was invented by Samuel Morse in 1836 and the telegraph device was able to transmit messages in the form or electrical impulses, ‘Morse Codes’, which can be converted into data (Du Boff, 1980).

A	· -	J	· - - -	S	· · ·	1	· - - - -
B	- · · ·	K	- · -	T	-	2	· - - - -
C	- · - ·	L	· - · ·	U	· · -	3	· · · - -
D	- · ·	M	- -	V	· · · -	4	· · · · -
E	·	N	- ·	W	· - -	5	· · · · ·
F	· · · ·	O	- - -	X	- · · -	6	- · · · ·
G	- · ·	P	· - · ·	Y	- · - -	7	- - · · ·
H	· · ·	Q	- · - ·	Z	- · · ·	8	- - · · ·
I	· ·	R	· · ·	0	- - - - -	9	- - · · ·

The Morse Code



Western Union- The Telegraph giant in 1800s

The telegraph technology was firstly adopted by the United States economy. Western Union, for instance, was the first monopolized firm that took full-control of telecommunication industry in the U.S. (Carey, 2009).

The Impact from the Telegraph

The effect of telegraph technology was remarkable. Messages were delivered quickly over long distances by transmitting information via electric wires and it was far more efficient than previous methods. (Carey, 2009).



Workers beside the Telegraph pole and Farewell! Pony Express

The telegraph was rapidly adopted by industrial sectors. The telegraph stations spread throughout railroads and it consolidated financial and commodity markets. Business was no longer in relation to personal transaction. The telegraph laid bridges between large numbers of anonymous buyers and sellers to be coordinated (Carey, 2009; Du Boff, 1980).



Telegraph poles with electric wire connections along roadside

This actually lowered information and transaction costs between businesses and it eventually boosted the U.S. economy.

The society also dramatically changed.

Information, such as newspapers were spread out among citizens rapidly and vastly, hence living along the telegraph offices was inevitable trend in the society. Moreover, enormous numbers of the telegraph transmission offices throughout the whole country offers more stable jobs for women as women labours took the majority of workers in telegraph offices by accepting lower wages than men (Du Boff, 1980).



Woman transmitting the Telegraph message

This brought dramatic changes in women society. Telegraph required skilled workers in its office for various transmissions and women in telegraph offices had managed themselves as good technicians and even chief officers. They even formed separated unions from men communities, therefore their forces were unavoidable (Jepsen, 2000).

The Telegraph in Australia

It is clear that the Telegraph changed dramatically regarding both economic and social aspects. So, what about in Australia?

Getting the News to Australia

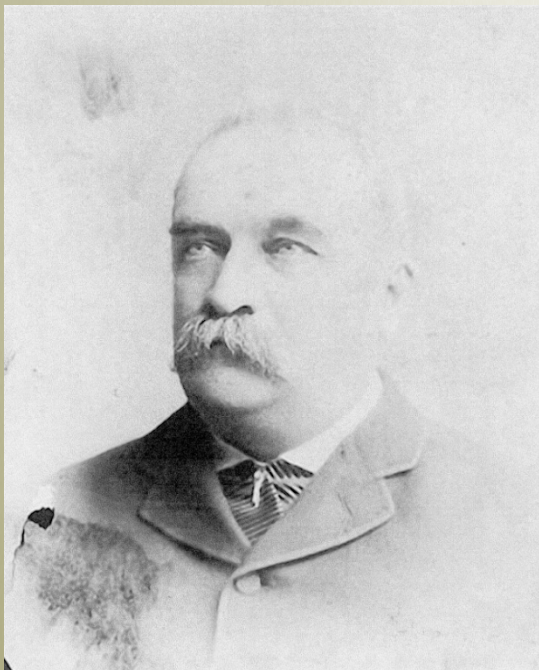
In the early years of Australian history, the country was badly frustrating for getting the News, letters and any kind of information from England. According to Eikelboom (2012), the messages from England could take over two years to reach Australia at the end of 1700s and in the second half of the 19th century, by placing huge effort to increase the speed of communication, more enhanced and powered ships were able to make the journey to Australia in 60 to 70 days. Moreover, even though the News had landed on the country, it had to be delivered by horse traffic with very slow, and frequently it was way out date by the time it was received. From all of those matters, Australia's geographical location as well as vast size of continent with low population only caused the hunger of getting information for the Australian people at that time.



Ship was the only method to connect Australia to the outside



Australia is big with low population



Samuel Walker McGowan

Introduction of Electric Telegraph

For the response of desperate needs of new communication system, Samuel Walker McGowan, a young Irish-Canadian engineer who studied the Morse electric telegraph in the U.S., brought the telegraph technology to Australia in 1853 (Department of Environment [DOE], 2003).

The Telegraph in Australia

Connecting the Colonies

After the first introduction of electric telegraph system, it was distributed and connected from colony to colonies. In 1854, the first telegraph in Australia was completed between Melbourne and Williamstown and the first message was delivered through Victoria in March, 1854. By December in 1854, the telegraph line was extended to Geelong and Queenscliff and the first important news in Australian history via telegraph line reached Melbourne was the Eureka rebellion on the gold fields at Ballarat (DOE, 2003; Museum Victoria, n.d.).



Williamstown Post and Telegraph Office, built in 1860. Now, it is remaining as the heritage



Sir Charles Todd, one of the greatest men in Australian telecommunication history

South Australia and Charles Todd

In South Australia, meanwhile, Charles Todd as astronomer, meteorologist and electrical engineer who was dispatched from the Colonial Office in London, was responsible to build proper telegraph line in the area. In July, 1858, with support by Samuel McGowan, Charles Todd successfully connected between Melbourne and Adelaide. Followed by October, Melbourne and Sydney were linked (DOE, 2003).

The Telegraph in Australia

Other Colonies

For the further expansion, the survey conducted to find the best route for a submarine telegraph between Victoria and Tasmania, and as a result Melbourne and Hobart were linked by undersea telegraph line in 1859. Queensland and Western Australia were also undergoing the telegraph installation independently and later in 1861, and consequently Sydney and Brisbane were bridged via the direct telegraph line (Australian Government, 2014; DOE, 2003; Museum Victoria, n.d.)



The Telegraph was firstly introduced in Tasmania in 1857

Seeking to the outside world

The benefit of telegraph technology was huge. The distant cities and towns in Australia were no longer being isolated from information sharing. The news and letters were delivered in faster speed and people were able to share stories and memories (Eikelboom, 2012).

The news from outside, however, was not 'A news' for Australian colonists. As it is mentioned earlier, it took almost 70 days to reach any information from Europe to Australia, therefore, connecting to the rest of world was desperately needed (Museum Victoria, n.d.).

In 1870, the telegraphic connection was built between Britain and India via the submarine cable and it was a huge step to bridge Australia to the rest of world, and the survey initiated among Australian colonies to find out which route could be taken for the submarine cable line connecting the outside of Australia (Eikelboom, 2012).

In 1870, the submarine cable from Java to Darwin was discussed by the British Australian Telegraph Company and it derived competitive conflicts between South Australia and Queensland regarding the decision of the best route from populated Southern Australia to Darwin for the outside connection (DOE, 2003). Undoubtedly, Queensland was far closer to Darwin than South Australia but there was also doubt on Queensland whether this government was capable of delivering information throughout the rest of Australian colonies (Australia Government, 2014).

After plenty soundings, South Australia finally won the battle and the route was decided as the telegraph connection from Adelaide to Darwin (DOE, 2003; Museum Victoria, n.d.).

The Overland Telegraph

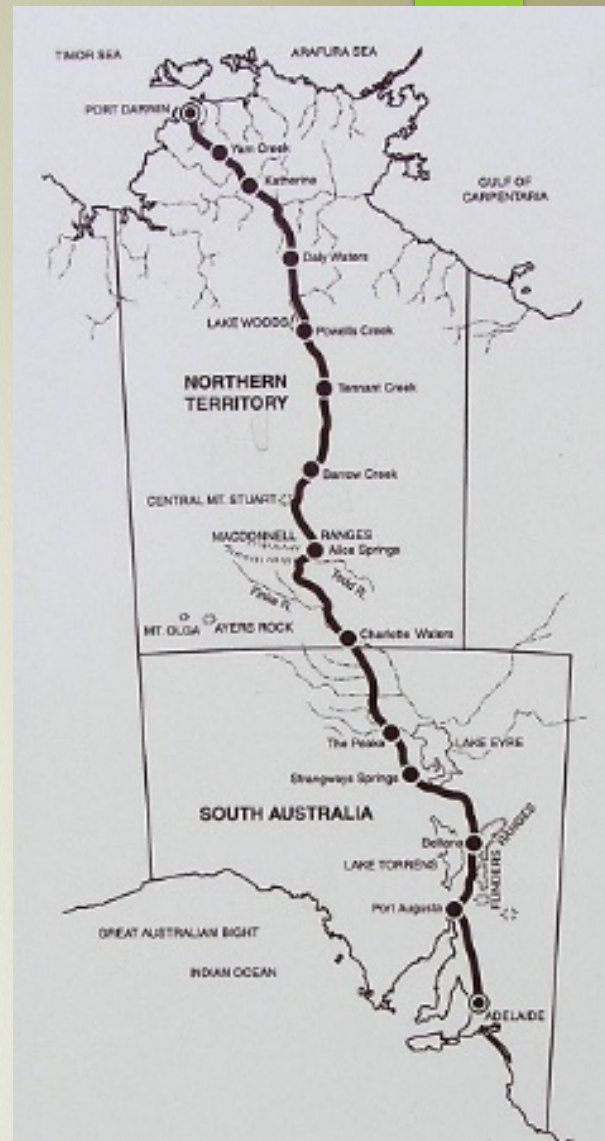
Audacity, but Bravery

Under the lead by Charles Todd, the construction of the telegraph line that covering the **3,178km** distance vertically crossed Australia continent was commenced (Eikelboom, 2012)

The whole line was divided into sections, northern, central and southern legs, and each part was taken by each teams consisted of skilled engineers (Eikelboom, 2012).

Almost **36,000 iron poles** and 11 repeater stations in every 250km distance were installed (Eikelboom, 2012)

On 22 August, 1872, the engineers from South and North finally made a wire connection in Northern Territory and this was the first telegraph connection between Australia, Europe and the rest of the world (Engineers Australia, 2012).



From North to South, From South to North



Workers at the day finished Overland Telegraph Line in Darwin in 1870

The Overland Telegraph

Australia, finally connected to the world

The first message via the overland telegraph touched London on 22 August, 1872 and within first 12 months, 4,000 messages successfully transmitted (DOE, 2003)

Further, Perth and Adelaide were linked in 1877 and hence entire Australian colonies were interconnected via the telegraph line and by the end of century, 18 million telegrams per year were delivered in Australia (Eikelboom, 2012).



Camel was the most transportation method in delivering wooden poles



Celebration at "the joining point- Frew Ponds"



Obsolete, but Memorable- many wooden poles still remaining along the telegraph line

The Overland Telegraph

The significance of the overland telegraph

The completion of the overland telegraph rewards noticeable values in Australian history. In terms of technological aspect, it was one of the giant constructions of cable link over vast distance under extremely harsh conditions in telecommunication history of world (DOE, 2003).

Social effect was also very significance, according to Engineers Australia (2012);

“The line connected Australia to the rest of the world and ended-its relative isolation. Newspapers were able to report major international events almost as they happened while commercial interests could maintain effective communication with their markets. The availability of the Overland Telegraph is credited with an increase of a quarter million pounds in the value of South Australia’s primary produce in the first year alone. The survey and construction of the line also opened up Central Australia and the Northern Territory to pastoral and mining industries which remain significant to this day”

Overall economy at that time was also robustly boosted by the telegraph technology. DOE (2003) stated that quickly shared information reduced any cost during business transaction, and most significantly, telegraph introduced the standard time of the nation. Precise time signals were being travelled one time a day throughout all telegraph stations so that it saved huge amount of money in the market and society.



Frew Ponds Overland Telegraph Line Memorial Reserve, Tennant Creek Area, Northern Territory, Australia

Conclusion

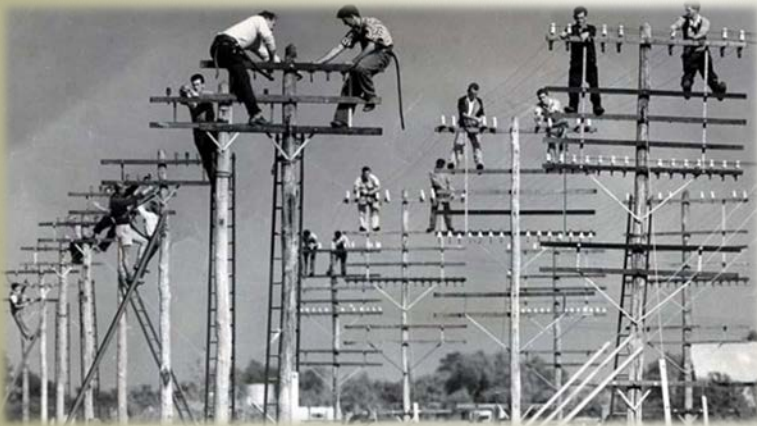
As all is seen, the telegraph technology completely changed the method of communication system and it is thought to be the prime version of modern telecommunication system.

Not only most populated countries such as England and the U.S. were enormously benefited by the telegraph technology, Australia, where is the vast continent with low population as well as the long-distances between cities and towns, also was hugely benefited by its technology.

And most importantly, brave Australians did achieve remarkable construction in modern telecommunication history, the Overland Telegraph.

Just think about NBN (National Broadband Network). It can be considered as a giant construction in telecommunication industry in Australia these days so that it is comparable with the overland telegraph construction.

In the past, however, there was no sophisticated tools, sufficient workforces as well as proper construction equipment. So, in terms of its audacity and comparable budgetary implication, how it was the wonderful and bravery achievement for the Australian history?



The Past- Electric wiring at the top of the telegraph poles



The Future- High-speed fibre optic cable installation

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